Echocardiography in Adult Congenital Heart Disease
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Due to the success of surgical repair of congenital cardiac defects, the population of adults with congenital heart defects is increasing rapidly. In fact, it is estimated that there are now more adults than children with congenital heart disease in the United States. Although surgical repair is now relatively safe and survival into adulthood is assured for the majority of infants born with congenital heart disease, such individuals are not “cured” and usually have a variety of residua and sequelae of the original defect and the surgical repair. Late complications are common and life expectancy remains limited for a large number of these patients.

With an increasing population and persistent clinical problems, it is inevitable that these patients require ongoing cardiac care throughout their lifetimes. Despite the fact that some regional centers of excellence for the care of the adult with congenital heart disease exist, many such patients present in community hospital and primary care settings.

Echocardiography is the definitive imaging tool for evaluation of infants and children with congenital heart disease, and remains the starting point for initial evaluation of the adult with congenital heart disease. In conjunction with a physical examination and a complete history, including initial diagnosis and subsequent surgical interventions, an echocardiographic examination is essential in the evaluation of any patient with congenital heart disease. However the professional who performs the echocardiographic study and the physician who interprets the images must understand the terminology of congenital heart disease and recognize the characteristic images and flow patterns associated with the various lesions encountered in this patient population.

Drs. Li, Henein, and Gatzoulis are internationally renown experts from the Royal Brompton National Heart and Lung Hospital, arguably the premier adult congenital cardiac center in the world. They have produced a volume that is neither an encyclopedic compendium nor a massive echocardiographic atlas. It is, rather, a thorough overview of the important aspects of echocardiographic evaluation of adults with congenital heart disease. Nearly every page contains echo images illustrating various views and findings for each type of congenital defect. Echocardiography critically influences patient management and this
book puts the echo findings into an appropriate clinical perspective. The authors have also included information from other imaging modalities, such as MRI, which serve as reminders of the complementary role of various techniques in the evaluation and management of this complex patient population.

_Echocardiography in Adult Congenital Heart Disease_ is an indispensable reference for anyone involved in imaging patients with congenital heart defects. It will introduce some readers to the subject of adult congenital heart disease and serve as a refresher for others. I hope that it will engage you and encourage you to read more, seek out original sources and increase your knowledge of this important field. This book will serve each of us in our role as lifelong learners and compel us to answer questions, produce new knowledge and teach others.

Daniel J. Murphy, Jr., MD
Stanford, California
May 2007
Doppler echocardiography has become the mainstay of adult cardiology practice worldwide. It provides essential information on cardiac anatomy and physiology. Its ease of use and complementary role to the bed-side examination has even given it the name of the “imaging stethoscope.”

In *Echocardiography in Adult Congenital Heart Disease*, we present our clinical experience in applying echocardiographic techniques specifically to the diagnosis and management of adult patients with congenital heart disease. Wherever possible, we have tried to provide suggestions for the adaptation of standard imaging protocols to accommodate specific congenital heart conditions. The extremely varied morphologic spectrum of congenital heart disease, however, reinforces the need for describing individual components of anatomy, that is, the atrioventricular and ventriculoarterial connections, and this cannot be overemphasized for complex lesions.

Our practical textbook provides an anatomical basis for these malformed hearts, together with a discussion of the physiological patterns seen in different conditions. Our focus has been on contemporary clinical practice. We have, thus, related imaging to the clinical status of the patient, and provided information on disease progression and the effects of further intervention whether surgical or catheter.

We hope that we have given a sufficient number of examples of the many different conditions and variations on physiology to have written a useful guide for the diagnosis and management of your patients with congenital heart disease. We have made this book a focused manual, which can be kept by the echo machine for easy reference, rather than a large textbook, which might gather dust on a shelf. This means that we have, to some extent, sacrificed additional information, which would have had less impact on day-to-day practice and would have made it more difficult to follow. We have also used terminology and descriptions with which both paediatric and adult congenital heart disease practitioners will be acquainted.

We are indebted to our patients who gave us such an opportunity to improve our understanding of congenital heart disease; clearly, without them this book would not have been possible.
We would value a great deal of your feedback as to what else you would like to see included in the second edition and any comments on how we can make this focused textbook better for your day-to-day echocardiographic practice.

Wei Li
Michael Henein
Michael A. Gatzoulis
London, UK
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